July 24, 2001

NIDA
NATIONAL INSTITUTE
ON DRUG ABUSE

NewsScan

NIDA ADDICTION RESEARCH NEWS

NEWS UPDATE

RESEARCH NEWS

Study Details 25-Year History of Drug Use by Vietnam War Veterans

In one of the few long-term studies of drug use among Vietnam veterans, researchers at the Washington University School of Medicine in St. Louis found that many veterans who developed a drug habit during the war had substantially stopped their drug use by the time they reached their mid to late '40s. The most frequently abused drug in this study was marijuana. Of those still using drugs in their 40's, almost 20 percent of the sample reported using it.

It was found that of those still using drugs in middle age, fewer than 10 percent were receiving treatment for drug abuse. These individuals had infrequent contact with the traditional health care system, and when they did, their substance abuse problems often went untreated. Veterans with Post Traumatic Stress Disorder (PTSD) who were also drug users were the most likely to be receiving some sort of treatment.

The researchers studied the drug use patterns of some 1200 individuals over a 25-year period. The sample included veterans whose urine tested positive for opiates, amphetamines, or barbiturates at the time they left Vietnam in 1971; veterans who were drug free; and control civilians. The initial interviews were in 1972 and 1974. Surviving individuals were interviewed again in 1996-1997. About 10 percent of the sample had died between the interviews in the 1970's and the 1990's.

- WHAT IT MEANS: This study suggests that the treatment needs of many middle-age drug users are not being met.

The study was published by lead investigator Dr. Rumi Kato Price in the June 28, 2001 issue of the *American Journal of Public Health*.

Propranolol Useful in Treating Cocaine Addicts with Severe Withdrawal Symptoms

Researchers at the University of Pennsylvania School of Medicine found that propranolol, a beta-blocker, reduced symptoms of cocaine withdrawal and improved treatment outcomes for patients with more severe withdrawal symptoms. Propranolol showed no effect in patients suffering milder effects from withdrawal, which can include feelings of anxiety, tremors, palpitations, and sweating.

The investigators randomly assigned 108 cocaine addicts who had volunteered for a treatment program to either propranolol (52 patients) or to placebo (56 patients). Patients in the treatment group received propranolol for 8 weeks.

Patients with more severe cocaine withdrawal symptoms treated with propranolol fared better than those who received the placebo. Among those with severe withdrawal symptoms, the propranolol-treated subjects had more drug-free urine screens than did those in the placebo group.

Beta-blockers are a well-established treatment for a number of anxiety states, including panic disorder, social phobia, and generalized anxiety disorder.

- WHAT IT MEANS: Clinical trials have shown that patients with severe withdrawal symptoms are more difficult to treat for cocaine addiction than are patients with milder withdrawal side effects. The fact that propranolol was most effective in patients with severe withdrawal symptoms may make it an effective adjunct therapy for these hard-to-treat patients.

This paper was published by lead investigator Dr. Kyle M. Kampman in the June 2001 issue of *Drug and Alcohol Dependence*.

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Researchers Use PET Scans to Understand Effects of Nicotine on Brain Function During Performance of a Working Memory Task

To better understand the brain mechanisms through which nicotine influences thinking, motor skills, and behavior, researchers in NIDA's Brain Imaging Center in Baltimore, Maryland used positron-emission tomography (PET) assays to measure changes in cerebral blood flow during a memory test.

A total of 11 smokers and 11 ex-smokers completed the study. Smokers were asked to abstain from cigarettes for 12 hours prior to the memory test. Each subject participated in two PET assays. In one PET session, subjects received nicotine gum; in the other, they received a placebo gum. The subjects were asked to remember the sequence of a series of three letters that were being changed constantly. The percentage of correct and incorrect responses, reaction times, and reaction time variability were analyzed.

Abstinent smokers, but not ex-smokers, showed significantly improved performance on the memory test after being given nicotine gum, compared with their performance after taking placebo gum. The decreased blood flow in certain regions of the smokers' brains compared with increased cerebral blood flow in ex-smokers after chewing nicotine gum is the first evidence of tolerance to nicotine measured directly in the human brain.

The PET assays showed that in ex-smokers given the placebo gum, the percentage of correct responses was correlated with increased blood flow in the left hemisphere of the brain. For smokers given the placebo gum, the percentage of correct responses was correlated with increased blood flow in the right hemisphere.

- WHAT IT MEANS: The differences in cerebral blood flow were seen as a function of nicotine addiction, suggesting that chronic exposure to nicotine or withdrawal from nicotine affects cognitive strategies used to perform memory tasks. The lack of increased blood flow after nicotine administration in smokers likely reflects tolerance.

The paper was published by lead investigator Dr. Monique Ernst in the April 10, 2001 issue of the *Proceedings of the National Academy of Sciences* and is available online at www.pnas.org.

Researchers Investigate Potential New Treatment for Drug Abuse Relapse Related To Environmental Cues

For individuals trying to break free of drug addiction, exposure to environments previously associated with drug use is one of the most common factors triggering relapse to drug-using behavior. Researchers from the Brookhaven National Laboratory, the NIDA Intramural Research Program, and other institutions collaborated on a study to better understand the neurochemical mechanisms controlling this phenomenon.

The scientists trained rats to associate cocaine administration with a certain environment. On the test day, rats were exposed to cocaine-associated environmental cues, but no cocaine was available. Dopamine concentrations in certain regions of the brain increased by 25 percent when the rats were placed in the environment they associated with cocaine. However, when racemic vigabatrin, a drug used to prevent seizure disorders in children, was given to the rats 2 and one-half hours before they were placed in the cocaine-associated environment, there was no increase in their dopamine levels.

- WHAT IT MEANS: Currently, there are no medications that are clinically effective against cue-induced drug craving or relapse. Based on the results of this experiment, racemic vigabatrin warrants further investigation as a potential pharmacological blockade of environmentally-induced increases in dopamine, an action that could give it an important role in the treatment of drug addiction.

This study was published by lead investigator Dr. Madina Gerasimov in the March 2001 issue of the *European Journal of Pharmacology*. It is available online at the journal Web site http://www.elsevier.com/locate/ejphar.

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NEW PUBLICATIONS

Updated Brochures on Marijuana Available for Teens, Parents

NIDA has updated two of its most popular publications: *Marijuana: Facts for Teens* and *Marijuana: Facts Parents Need to Know.*

- *Marijuana: Facts for Teens* explains the current knowledge about marijuana and the latest scientific information on its effects. The brochure provides teens with answers to frequently asked questions about marijuana, including what it is, who uses it, and how it affects a person physically and mentally after short- and long-term use.
- *Marijuana: Facts Parents Need to Know* provides research on the dangers of marijuana. The brochure gives parents the latest scientific information about the drug and includes suggestions on how to talk to teenagers about marijuana.

This is the first time these brochures have been updated since 1998. Both are available in English and in Spanish.

Single copies of each brochure are available free of charge by calling the National Clearinghouse on Alcohol and Drug Information (NCADI) at 1-800-729-6686. For the teen brochure, ask for publication number PHD713; for the brochure for parents, ask for publication number PHD712. Both brochures also are downloadable from NIDA's Web site at www.drugabuse.gov.

The brochures also can be ordered in bulk quantity from the Government Printing Office by calling 202-512-0000. For the teen brochure, ask for publication number 017-024-01576-8; for the brochure for parents, ask for publication number 017-024-01575-0. There is a small charge for bulk quantities.

UPCOMING EVENTS

- August 9-10, 2001: 2nd National Conference on Drug Abuse Prevention Research: A Progress Report, Omni Shoreham Hotel, Washington, DC
- September 24-26, 2001: Bridging Science and Culture to Improve Drug Abuse Research in Minority Communities, Wyndham Franklin Plaza Hotel, Philadelphia, PA.

Watch upcoming issues of *NewsScan* for more information on these events, or call NIDA at 301-443-6245.

For more information about any item in this *NewsScan:*

- Reporters, call Michelle Muth, NIDA Press Office, at 301-443-6245
- Congressional staffers, call Keith Van Wagner, NIDA Office of Science Policy and Communications, at 301-443-6071.

The National Institute on Drug Abuse is a component of the National Institutes of Health, U.S. Department of Health and Human Services. NIDA supports more than 85 percent of the world's research on the health aspects of drug abuse and addiction. The Institute carries out a large variety of programs to ensure the rapid dissemination of research information and its implementation in policy and practice. Fact sheets on the health effects of drugs of abuse and other topics can be ordered free of charge in English and Spanish by calling NIDA Infofax at 1-888-NIH-NIDA (644-6432) or 1-888-TTY-NIDA (889-6432) for the deaf. These fact sheets and further information on NIDA research and other activities can be found on the NIDA home page at http://www.drugabuse.gov.